

MARKET POTENTIAL EVALUATION FOR THE
PROGRAM ENVIRONMENT MANAGER

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UNITED STATES, West Coast
2471 East Bayshore Road

Y-CHC
QA9

California 94303
00
7

INPUT

AUTHOR

Chelsea Computing: Market

Potential Evaluation for the
Program Environment Manager (5/80)

DATE
LOANED

BORROWER'S NAME

East Coast
t-1
Jersey 07662

h Floor)

-9 Merriwa Street
lon N.S.W. 2072

JAPAN

Overseas Data Service Company, Ltd.
Shugetsu Building, No. 12-7 Kita Aoyama
3-Chome Minato-Ku
Tokyo, 107
Japan
(03) 400-7090

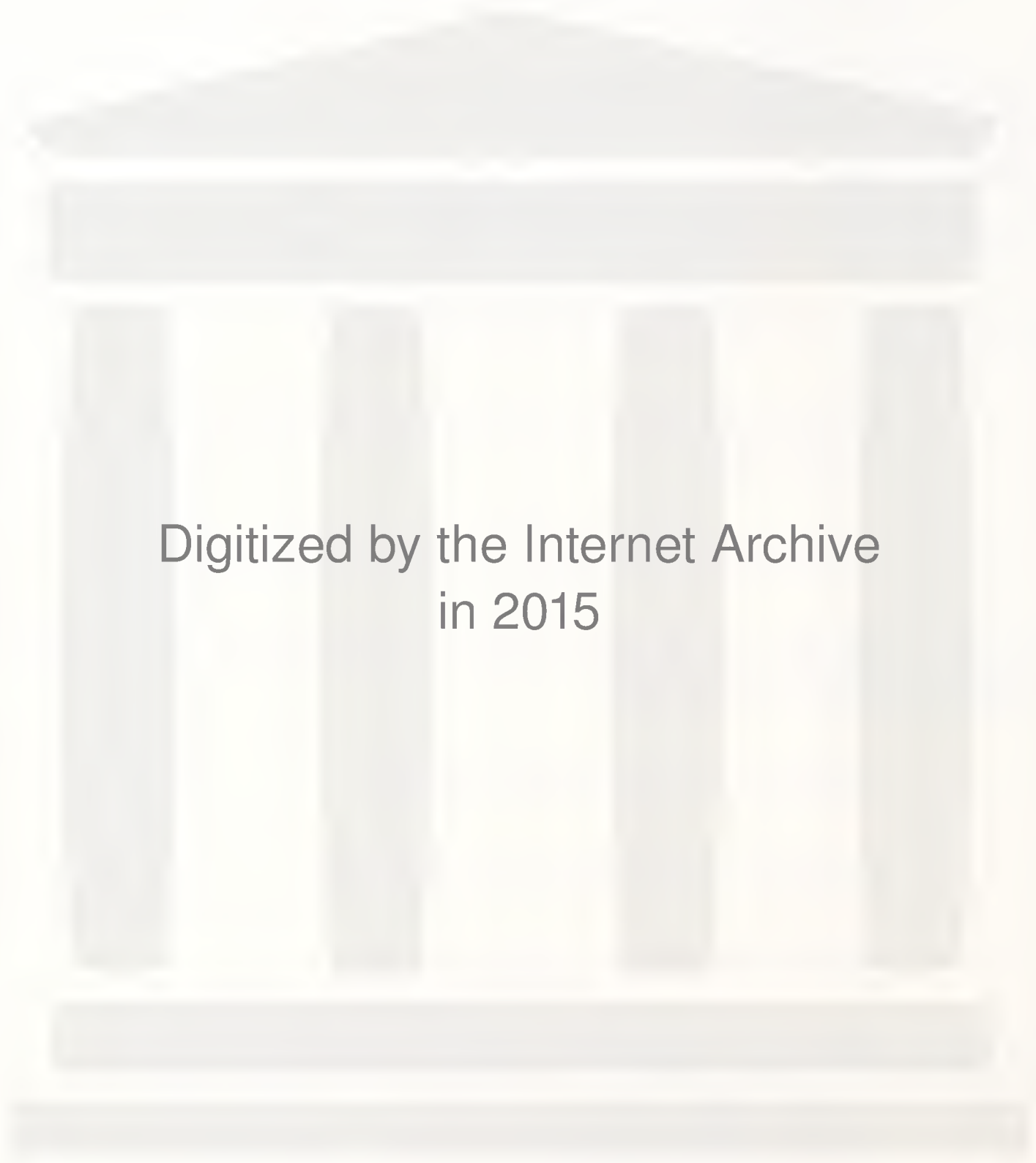
ABSTRACT

MARKET POTENTIAL EVALUATION FOR THE PROGRAM ENVIRONMENT MANAGER

This report was prepared as a custom study at the behest of Chelsea Computing. The purpose of this report is to evaluate the market potential for the "Program Environment Manager" offered by Hogan Associates. Telephone interviews were used to supplement information from INPUT's files in the course of this study.

INPUT completed the following tasks during this project:

- Forecast the size of the U.S. systems software product market in 1980 through 1984.
- Analyzed market segments for systems software products.
- Forecast the size of the market for products like the Program Environment Manager (PEM).
- Forecast unit and dollar sales for PEM.
- Determined a typical buyer profile for PEM.
- Analyzed competitive influences to PEM.
- Prepared a pricing recommendation and strategy for PEM.
- Outlined suggested terms, conditions, and procedures for a licensing arrangement for PEM with a systems software vendor.



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PROGRAM ENVIRONMENT MANAGER

Prepared For
CHELSEA COMPUTING

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MAY 1980

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MARKET POTENTIAL EVALUATION FOR THE PROGRAM ENVIRONMENT MANAGER

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I INTRODUCTION

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- The purpose of this report is to evaluate the market potential for the "Program Environment Manager" offered by Hogan Associates.
- Telephone interviews were used to supplement information from INPUT's files in the course of this study.
- INPUT completed the following tasks during this project:
 - Forecast the size of the U.S. systems software product market in 1980 through 1984.
 - Analyzed market segments for systems software products.
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 - Forecast unit and dollar sales for PEM.
 - Determined a typical buyer profile for PEM.
 - Analyzed competitive influences to PEM.

- Prepared a pricing recommendation and strategy for PEM.
- Outlined suggested terms, conditions, and procedures for a licensing arrangement for PEM with a systems software vendor.
- Per client's request, one exhibit was prepared as a part of this project that is unrelated to the PEM evaluation. This exhibit contains the number and deposits of selected financial institutions in the U.S. in 1978 and is listed as Appendix A, Exhibit A-1.
- INPUT will provide telephone support of Chelsea Computing to answer questions pertaining to this custom study.

II SUMMARY OF FINDINGS AND RECOMMENDATIONS

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- The market for systems software products in the U.S. exceeds \$1 billion today and will exceed \$4 billion by 1984. The market is growing at a compound average rate of over 30% per year.
- The market for products like the Program Environment Manager (PEM) will grow from \$20 million in 1980 to nearly \$60 million in 1984.
- The sales forecast for PEM is shown in Exhibit II-1.
- There are currently no directly competitive products to PEM, although there are in-house options available to the user that appear less expensive to implement than PEM.
- INPUT interviewed prospects and industry experts during the course of this study to determine a level of interest in PEM.
 - Prospects were reluctant to accept the PEM concept for existing applications because of the need for conversion. No prospects were surveyed that had an unusually high level of new application development in an environment where PEM could help.
 - Industry experts were concerned about trying to sell PEM to users who would have to convert applications. This was deemed to be very improbable.

EXHIBIT II-1

PROGRAM ENVIRONMENT MANAGER SALES FORECAST, 1980-1984

SALES INDICATOR	SALES FORECAST					AVERAGE ANNUAL GROWTH RATE 1980-1984
	1980	1981	1982	1983	1984	
REVENUE	\$0.2M	\$0.5M	\$ 1.3M	\$ 2.5M	\$ 4.5M	118%
UNITS	3	7	15	25	37	87%

- A viable alternative to licensing PEM directly to an end user is to use the same approach that Hogan Associates currently uses: package PEM with another software system and then sell the two systems together.
 - Several prospects and industry experts suggested that this course of action held the greatest potential for PEM. INPUT supports this position.
- The price for PEM should remain \$50,000 for 1980, with the following stipulations:
 - The actual list price of PEM should be \$80,000.
 - Early installations can receive a discount of \$30,000 for the balance of 1980 and \$20,000 in 1981.
- The price of PEM should reach \$110,000 by 1984. Additional features and functions in PEM will be needed to support that price.
- There are many aspects of a licensing arrangement with a vendor that must be considered. Some of the important aspects include the following:
 - Software vendors have sales costs that approach 50% of sales.
 - Royalties paid for PEM will most likely be in the range of 5-15% of list price.
 - Leases, rentals, multiple copy discounts, and other discounting techniques should not influence the royalty due.
 - A sales guarantee plan and related payment schedule must be negotiated with the vendor.

- The term of the licensing agreement is important. Hogan must retain the ability to terminate the agreement for nonperformance by the vendor.
 - The royalty rate could be established on a sliding scale. As the vendor sells more copies of PEM, the royalty rate would decrease. There is an incentive to the vendor to reach the lower royalty rate in order to increase profitability on PEM.
 - The vendor should commit to a minimum investment level for adding PEM to its product line.
 - The issue of who will maintain PEM must be resolved.
 - Hogan must retain the right to sell PEM with its own applications software.
 - The question of licensing PEM on an exclusive or nonexclusive basis must be answered.
- The licensing of PEM to a vendor should be treated as a highly specialized sales situation. The situation calls for extreme honesty between parties to eliminate surprises after the fact that could lead to litigation.
 - Hogan should prepare a strategic marketing plan for PEM that can be reviewed by the vendors interested in obtaining a PEM license. This plan need not be fancy, but should contain facts and figures that will help facilitate the vendors' decision-making process.

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III MARKET SIZE AND FORECAST

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- The market for systems software in the U.S. will exceed \$1 billion in 1980 and \$4 billion by 1984, as indicated in Exhibit III-1.
- IBM is both the dominant vendor and the major driving force creating this market.
 - IBM is unbundling systems software from hardware. The effect of the unbundling is to create a rapid rate of growth for systems software sales for that company.
 - At least 75% of the market for systems software products is for IBM and IBM-compatible hardware.
- As hardware manufacturers follow IBM's lead, more systems software will be priced separately from the hardware.
 - This is becoming an important force in the minicomputer market.
- Independent systems software companies must examine the pricing policies of the hardware manufacturers in order to price their software properly.
 - Hardware manufacturers charge a lower price for software than independent software companies because the hardware manufacturer can expect to sell more copies of the software. For example, IBM

EXHIBIT III-1

UNITED STATES SYSTEMS SOFTWARE
MARKET SIZE AND GROWTH FORECAST,
1980-1984

VENDOR TYPE	MARKET SIZE (\$ MILLION)					AAGR 1980- 1984
	1980	1981	1982	1983	1984	
HARDWARE MANUFACTURERS						
• IBM	\$ 490	\$ 690	\$ 960	\$1,350	\$1,890	40%
• OTHER MEDIUM AND LARGE MAINFRAME COMPUTER MANUFAC- TURERS	70	90	105	125	150	20
• MINICOMPUTER MANUFAC- TURERS	100	130	170	220	290	30
• TOTAL HARDWARE MANUFACTURERS	\$ 660	\$ 910	\$1,235	\$1,695	\$2,330	36%
REMOTE COMPUTING SERVICES COMPANIES	90	110	140	180	220	25
INDEPENDENT SYSTEMS SOFTWARE VENDORS	580	760	990	1,280	1,670	30
TOTAL	\$1,330	\$1,780	\$2,365	\$3,155	\$4,220	33%

effectively controls the price of all data dictionaries by selling its dictionary at a relatively low price.

- Systems software products can be segmented into three groups.
 - System operations products manage the computer system resource during applications program execution. Examples of such products are operating systems, DBMS, and communication monitors.
 - System utilization products utilize the computer system more effectively. Examples of such products are performance measurement systems, job accounting systems, and utilities.
 - System implementation products prepare applications for execution by assisting in design, programming, testing, and related functions. Examples of such products are languages, productivity aids, report writers, and program library systems.
- The forecast through 1984 for system operation products is shown in Exhibit III-2.
 - This class of products accounts for over 50% of the entire systems software market.
- There are currently no directly competitive products to the Program Environment Manager (PEM).
- The biggest competitive pressure for PEM is the existence of alternative solutions that appear to the user to be less expensive to implement than PEM. For example, if a user has IMS DB/DC installed, there are few compelling reasons to convert to an interface in such an environment.
- The ideal prospect for PEM is one that:

EXHIBIT III-2

MARKET SIZE AND GROWTH FORECAST FOR SYSTEMS OPERATIONS PRODUCTS

MARKET SIZE (\$ MILLION)					AAGR 1980-1984
1980	1981	1982	1983	1984	
\$690	\$920	\$1,220	\$1,620	\$2,150	33%

- Has many new applications under development.
 - Plans to upgrade all applications and use a data base management system that has not yet been identified.
 - Currently uses several data base management systems and has not decided which one will be the official system in the future.
 - Is a vendor of applications software that needs a generalized interface to any prospect's data base management system.
- INPUT interviewed over ten prospects and industry experts about the utility of and market demand for PEM.
 - No one interviewed expressed a need for a product like PEM.
 - Prospects that had seen the COMPUTERWORLD article on PEM expressed differing reasons for requesting additional product information from Hogan Associates. The three most common reasons were:
 - Prospects thought that PEM improved system throughput and would therefore free up CPU time.
 - Prospects were information collectors and simply curious to find out more about any new product announcement.
 - Prospects thought that PEM was a standard enforcement system.
- There are several important product needs identified from the interviewing process, but these needs are only loosely related to PEM.
 - There is a need for a product to improve overall computer system throughput. This need has always existed.

- There is a need for a system to enforce installation standards. This need is typically found in most large DP organizations, but few companies are willing to invest the time and money to solve the problem. Data dictionary usage is a common approach used to solve a part of this problem.
- One of the major drawbacks of a product like PEM is that the user must reprogram all existing applications that are to run under PEM. Prospects interviewed stated that this requirement made PEM unacceptable for consideration.
- INPUT surveys have found that approximately 50% of the user programmers are involved in a software maintenance job function. The user management perceives that it is virtually impossible to load any more work activity on the software maintenance staff.
- There is an opportunity for PEM-like products to be sold in combination with application software products.
 - Hogan Associates currently does this and reportedly has 15 PEM sites using Hogan Associates applications software.
 - University Computing Company has attempted to use this approach for several years with its banking applications software in order to interface applications to various user data base management systems.
- Vendors such as Cullinane, Cincom, Software AG, MRI, etc., could have an interest in PEM because it would allow application programs (once converted to run under PEM) to operate under any data base system without requiring further program modifications.
- The overall market forecast for PEM-related products is shown in Exhibit III-3. This forecast includes PEM-like products sold separately as well as PEM-like products sold in conjunction with application programs.

EXHIBIT III-3

MARKET SIZE AND GROWTH FORECAST FOR PRODUCTS SUCH AS THE "PROGRAM ENVIRONMENT MANAGER" FROM HOGAN ASSOCIATES

MARKET SIZE (\$ MILLION)					AAGR 1980-1984 (PERCENT)
1980	1981	1982	1983	1984	
\$20	\$25	\$35	\$45	\$55	29%

- A forecast of separately-sold PEM systems is shown in Exhibit III-4.
 - This forecast assumes a software maintenance rate of 15% of the then-in-effect purchase price for PEM. Software maintenance is not provided until one year after the sale is made.
 - The forecast is based on a purchase-only basis. All leased or rented units have been converted to an equivalent purchase price.

EXHIBIT III-4

MARKET FORECAST FOR "PROGRAM
ENVIRONMENT MANAGER" SOLD SEPARATELY
FROM APPLICATIONS PROGRAM,
1980-1984

SALES INDICATOR	MARKET FORECAST				
	1980	1981	1982	1983	1984
REVENUE (\$ THOUSAND)					
• NEW UNITS SOLD	\$ 150	\$ 480	\$ 1,200	\$ 2,250	\$ 4,070
• SOFTWARE MAINTENANCE ON EXISTING UNITS	-	27	96	203	413
TOTAL	\$ 150	\$ 507	\$ 1,296	\$ 2,453	\$ 4,483
UNITS SOLD					
• NEW UNITS	3	8	15	25	37
• CUMULATIVE UNITS	3	11	26	51	88

IV RECOMMENDATIONS

IV RECOMMENDATIONS

- Pricing software products is an unusually subjective exercise. INPUT surveys repeatedly show that vendors price software products according to what the market will bear.
 - This determination is an intuitive guess in most cases.
 - Vendors examine competitive products and alternative solution costs before arriving at a price.
- Initial pricing of the Program Environment Manager (PEM) has been completed using this intuitive approach.
- INPUT supports the decision to price PEM initially at \$50,000. However, this price should be considered an introductory offer only and should be changed within 12 months.
 - A date should be established for when the price will be raised. This will allow the sales staff to apply pressure to close.
- The pricing strategy should reflect a compound, planned increase of approximately 20% per year. By 1984, PEM will have a purchase price of \$110,000.
 - New features and functions should be designed and implemented in PEM. This will help justify price increases.

- Users of new software products typically expect a discount when purchasing a product that has fewer than five to ten customers.
 - This philosophy could be effectively used here. The product should carry a list price of \$80,000, but early buyers can obtain the product for \$50,000.
 - The 1981 price of \$60 thousand is suggested because it is unlikely that a significant number of sales will be made in 1980.
- The pricing recommendation is summarized in Exhibit IV-1.
- PEM could be effectively sold by any number of systems software vendors. These vendors have the knowledge, expertise, and reputation necessary to sell a product like PEM.
- Hogan Associates needs to find a vendor that will dedicate resources to the sale of PEM. This is a critical element of any licensing arrangement.
- Hogan Associates should be realistic in royalty expectations from PEM.
- Systems software vendors' sales costs can approach 50% of revenue. If a vendor with this type of sales-cost structure sells PEM, the amount that Hogan should expect to receive would be 5-10% of the selling price of PEM.
- Hogan should negotiate for a royalty licensing arrangement with a systems software vendor.
 - The royalty should be based on the then-in-effect sales price of PEM. In this way Hogan will not become involved in multiple-copy discount arrangements or any other discounting procedures.
 - A realistic royalty for PEM is in the range of 5-10% of the sales price.

PROGRAM ENVIRONMENT
MANAGER PRICING RECOMMENDATION

PRICING RECOMMENDATION (\$ THOUSAND)				
1980	1981	1982	1983	1984
\$50	\$60	\$80	\$90	\$110

- Hogan Associates should ask the system software vendor to guarantee a specified number of sales in a given timeframe.
 - This guarantee forces the vendor to dedicate proper resources to the product.
 - The guarantee should be reasonable so that the vendor can readily expect to exceed the quota assuming proper resource dedication to the sales effort.
 - The guarantee of a given number of sales should be translated into a dollar obligation due Hogan from the vendor. For example, if the selling price is \$50,000, the vendor commits to ten sales in the first year and the royalty is 10% of sales. Hogan should ensure that the agreement specifies a minimum of \$50,000 ($\$50,000 \times 10\% \times 10$) to be paid to Hogan that year.
- Payment terms should be clearly spelled out. It is not unreasonable to expect that the vendor will ask to pay the royalty due within 30 days of receipt of funds from the user by the vendor.
- All systems should be calculated on a purchase equipment basis. That is, if a user leases or rents PEM, the royalty due Hogan is calculated on a percentage of the posted list price.
 - Hogan should ensure that royalties paid on leases and rentals are paid within a specified time period (for example, three months).
 - For leases and rentals, Hogan should collect its royalty independent from receipt of funds from the user by the vendor.
- Hogan should closely examine the length of the licensing agreement.

- Hogan might be desirous of cash now and would therefore entertain a complete sale of rights to a vendor for a cash sum (\$100,000 - 300,000).
- Hogan may want to share in the rewards of a longer-term relationship and would therefore license a vendor to sell PEM for a particular period of time.
- A reasonable initial time in a licensing arrangement is three to five years with a provision that, if sales targets are not achieved according to the agreed-upon schedule, the licensing arrangement can be terminated by Hogan Associates.
- It is reasonable for a vendor to expect that the royalty percentage rate could be reduced over the life of the agreement. The royalty rate should be a function of the number of sales of PEM.
 - A higher rate should exist for early sales.
 - A lower rate after a specified number of sales becomes an incentive for the vendor. The vendor can expect greater profit with the lower royalty rate.
- The vendor should commit to invest at least a certain dollar level in PEM.
 - This investment can be in a sales force, training, product literature, etc.
- Hogan Associates must resolve the issue of PEM maintenance.
 - Will Hogan maintain PEM or will the vendor, or will each maintain their own version. Each option has its advantages and disadvantages.
- Hogan Associates must retain the right to sell PEM in conjunction with its own applications software.

- Hogan must decide whether exclusive or nonexclusive rights to PEM will be sold to the vendor. There are strong reasons to adopt each approach.
 - Vendors generally request and pay a premium for exclusive rights to a product.
- Hogan Associates should make provision for the vendor to examine the PEM source code and documentation prior to consummation of the sale.
 - The vendor should travel to Hogan's offices for this purpose.
 - Documentation can generally be sent to the vendor provided that the vendor signs a nondisclosure agreement for this purpose.
- There are at least four approaches that could be followed with PEM. These approaches can be done separately or concurrently and are not mutually exclusive.
 - Hogan could license PEM as a systems software vendor who in turn could sell licenses to end users.
 - Hogan could license PEM to a systems software vendor who would use PEM in conjunction with its own systems software products.
 - Hogan could license PEM to an application software product company who would use PEM in much the same way that Hogan does today.
 - Hogan could license PEM to a remote computing service company who would use PEM as Hogan does.
- The last three approaches for licensing PEM could be handled with nonexclusive marketing rights. Vendors could license PEM with their software and Hogan could license PEM to many vendors.

- A systems software vendor selling directly to an end user would probably request exclusive marketing rights to PEM.
- A list of prospective vendors to contact for licensing PEM is provided in Exhibit IV-2. INPUT has not contacted any of these vendors to discuss marketing PEM.
- Hogan Associates should contact some or all of the vendors identified in Exhibit IV-2 to ascertain the level of interest that the vendors have in marketing PEM on some basis.
 - Most of the companies will have a person identified as responsible for evaluating new products. The contact is easy to make.
- Approaching a vendor with PEM is similar to making a sales call. The main difference is that both sides must exercise extreme honesty with each other at all times during the negotiations. Surprises to either party after closing can be the basis for protracted legal proceedings.
- Hogan Associates should have product literature on PEM available for prospective licensees to evaluate. This literature need not be fancy, but must be accurate and complete.
- A brief strategic marketing plan for licensing PEM should be drafted. This plan should include the options for licensing PEM:
 - Vendor selling PEM to end users.
 - Vendor selling PEM bundled with services, systems software, or application software products.

EXHIBIT IV-2

SUGGESTED VENDORS FOR PEM LICENSING

REMOTE COMPUTING SERVICES COMPANIES	SYSTEMS SOFTWARE VENDORS	APPLICATION SOFTWARE VENDORS	MIXED VENDORS
BOEING COMPUTER SERVICES NATIONAL CSS SERVICE BUREAU CORPORATION TYMSHARE UNITED INFORMA- TION SYSTEMS	BOOLE & BABBAGE CINCOM CULLINANE MRI SOFTWARE AG SOFTWARE MODULE MARKETING	INFONATIONAL INFORMATION SCIENCE INSURANCE SYSTEMS OF AMERICA MARTIN MARIETTA DATA SYSTEMS McCORMACK & DODGE MSA SOFTWARE INTER- NATIONAL	INFORMATICS UNIVERSITY COM- PUTING COMPANY

- The marketing plan should also contain a sales forecast developed along the lines of this study. The sales forecast in Exhibit II-1 may be used for this purpose, provided that INPUT is properly credited as the information source.
- The strategic marketing plan should look like any proposal that would be given to a banker or other investor. In effect, licensing PEM is a way to generate capital.

APPENDIX A: THE NUMBER AND DEPOSITS OF SELECTED
FINANCIAL INSTITUTIONS IN THE U.S.

EXHIBIT A-1

1978

THE NUMBER AND DEPOSITS OF SELECTED FINANCIAL INSTITUTIONS IN THE U.S.

FINANCIAL INSTITUTION TYPE	ASSETS						
	BELOW \$10M	\$10M TO \$100M	\$100M TO \$500M	\$500M TO \$750M	\$750- \$1 BILLION	OVER \$1 BILLION TOTAL	TOTAL
BANKS							
NUMBER TOTAL DEPOSITS	4,140 \$23.2 B	9,850 \$280.6B	1,020 \$187.9B	100 \$51.2B	40 \$32.1B	150 \$449.9B	15,300 \$1,024.9B
S & L							
NUMBER TOTAL DEPOSITS	1,400 \$8.7B	2,700 \$99.4B	533 \$176.9B	67 \$40.9B	27 \$21.7B	43 \$85.4B	4,770 \$433.0B
CREDIT UNION							
NUMBER TOTAL DEPOSITS	21,215 \$22.6B	1,260 \$23.1B	25 \$7.3B	- -	- -	- -	22,500 \$53.0B
SAVINGS BANKS							
NUMBER TOTAL DEPOSITS	10 \$64M	90 \$11.9B	300 \$38.6B	20 \$11.0B	20 \$16.6B	35 \$69.9B	475 \$148.1B
GRAND TOTAL							
NUMBER TOTAL DEPOSITS	26,765 \$54.6B	13,900 \$415.0B	1,878 \$410.7B	187 \$103.1B	87 \$70.4B	228 \$605.2B	43,045 \$1,659.0B

APPENDIX B: DEFINITIONS

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SOFTWARE PRODUCTS

- This category includes user's purchase of systems packages for use on in-house computer systems. Included are lease and purchase expenditures, as well as fees for work performed by the vendor to implement and maintain the package at the users' site(s). Fees for work performed by organizations other than the package vendor are counted in professional services.
- System Products are software that enable the computer/communications system to perform basic functions. They consist of:
 - System operations products which function during applications program execution to manage the computer system resource. Examples include operating systems, DBMS, communication monitors, emulators, and spoolers.
 - System utilization products which are used by operations personnel to utilize the computer system more effectively. Examples include performance measurement, job accounting, computer operations scheduling, and utilities.
 - System implementation products which are used to prepare applications for execution by assisting in designing, program-

ming, testing, and related functions. Examples include languages, sorts productivity aids, data dictionaries, report writers, project control systems, program library management systems, and retrieval systems.

